

IN THE CLAIMS

Please cancel Claims 1-36.

PLEASE ADD THE FOLLOWING NEW CLAIMS

37. (New) An ECU for an internal combustion engine comprising:
a circuit board;
at least one electrical component attached to the circuit board; and
a heat sink in contact with the electrical component and having a cooling
flow therethrough to dissipate heat from the electrical component.
38. (New) The ECU of claim 37 wherein the cooling flow is water.
39. (New) The ECU of claim 37 incorporated into an engine constructed to power a
watercraft.
40. (New) The ECU of claim 37 wherein the cooling flow through the heat sink
follows a generally linear path.
41. (New) The ECU of claim 37 wherein heat sink further comprises an inlet coupler
and an outlet coupler, the couplers constructed to be connected to a water flow.
42. (New) The ECU of claim 37 further comprising an ignition module attached to
the circuit board and constructed to monitor an ignition coil.
43. (New) The ECU of claim 37 further comprising a housing constructed to enclose
the circuit board and the electrical component.

44. (New) An ECU for an internal combustion engine comprising:
a circuit board;
at least one heat generating component attached to the circuit board; and
an one-piece heat sink having a cooling path therethrough and constructed to be
located adjacent the heat generating component.
45. (New) The ECU of claim 44 wherein the heat sink further comprises an inlet on
one side and an outlet on another side generally opposite the one side.
46. (New) The ECU of claim 44 further comprising an ignition module mounted to
the circuit board and constructed to monitor an ignition coil.
47. (New) The ECU of claim 44 further comprising a housing constructed to enclose
the circuit board and a portion of the heat generating component.
48. (New) The ECU of claim 44 wherein the cooling path is constructed to pass
water therethrough.
49. (New) The ECU of claim 44 wherein the heat sink is constructed to snugly
engage a portion of an ECU housing and the heat generating component.
50. (New) The ECU of claim 44 further comprising a plurality of electrical
components separated from the one-piece heat sink.
51. (New) The ECU of claim 44 incorporated into an outboard motor.
52. (New) An ECU for an internal combustion engine comprising:

a circuit board constructed to have a plurality of electrical components attached thereto; and

an ignition module attached to the circuit board and adapted to monitor a firing condition of a plurality of ignition coils.

53. (New) The ECU of claim 52 further comprising a water cooled heat sink in direct thermal communication with the ignition module.

54. (New) The ECU of claim 52 wherein the ignition module monitors a voltage across a capacitor electrically connected to the plurality of ignition coils.

55. (New) The ECU of claim 52 wherein the ignition module verifies that at least one of the plurality of ignition coils has fired.

56. (New) An ignition system for an internal combustion engine comprising:
an ECU comprising:
a control circuit;
an ignition module in communication with the control circuit;
a fuel injector drive circuit adapted to receive an input from the control circuit;
and
an ignition coil electrically connected to the ECU and monitored by the ignition module.

57. (New) The ignition system of claim 56 further comprising a heat sink connected thereto and in thermal communication with the ignition module.

58. (New) The ignition system of claim 57 wherein the heat sink has a water passage therethrough and is constructed to remove heat from the ECU.

59. (New) The ignition system of claim 58 wherein the water passage is directly connected to one of a body of water and an engine cooling system.

60. (New) The ignition system of claim 56 incorporated into an engine constructed to power a watercraft.

61. (New) The ignition system of claim 56 further comprising another ignition coil monitored by the ignition module.